



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2019-0436; Product Identifier 2019-NM-014-AD]

RIN 2120-AA64

Airworthiness Directives; Bombardier, Inc., Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Bombardier, Inc., Model CL-600-2B19 (Regional Jet Series 100 & 440), CL-600-2C10 (Regional Jet Series 700, 701 & 702), CL-600-2D15 (Regional Jet Series 705), CL-600-2D24 (Regional Jet Series 900), and CL-600-2E25 (Regional Jet Series 1000) airplanes. This proposed AD was prompted by reports of power control unit (PCU) rod end fractures due to pitting corrosion. This proposed AD would require revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations. This proposed AD would also require detailed inspections of the elevator PCU rod ends and applicable corrective actions. This proposed AD would also prohibit using certain aircraft maintenance manual tasks. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Bombardier, Inc., 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; Widebody Customer Response Center North America toll-free telephone 1-866-538-1247 or direct-dial telephone 1-514-855-2999; fax 514-855-7401; email ac.yul@aero.bombardier.com; Internet <http://www.bombardier.com>. You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0436; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the regulatory evaluation, any comments received,

and other information. The street address for Docket Operations is listed above.

Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Darren Gassetto, Aerospace Engineer, Mechanical Systems and Admin Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7323; fax 516-794-5531; email 9-avs-nyaco-cos@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2019-0436; Product Identifier 2019-NM-014-AD” at the beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. The FAA will consider all comments received by the closing date and may amend this NPRM because of those comments.

The FAA will post all comments the agency receives, without change, to <http://www.regulations.gov>, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact the agency receives about this NPRM.

Discussion

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian AD CF-2018-29, dated November 2, 2018 (referred to after

this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for certain Bombardier, Inc., Model CL-600-2B19 (Regional Jet Series 100 & 440), CL-600-2C10 (Regional Jet Series 700, 701 & 702), CL-600-2D15 (Regional Jet Series 705), CL-600-2D24 (Regional Jet Series 900), and CL-600-2E25 (Regional Jet Series 1000) airplanes. The MCAI states:

There have been several in-service reports of Power Control Unit (PCU) rod end fractures due to pitting corrosion. Investigation revealed that the PCU rod end spherical bearing could seize which, in turn, could induce a bending moment on the PCU output rod. This bending moment will eventually fracture the rod end. It was also noted that this failure mode typically occurs within the first 6000 hours of aeroplane operation.

This condition, if not corrected, could lead to a disconnect between the PCU and the control surface, potential loss of the control surface function or inadequate flutter suppression.

This [Canadian] AD mandates incorporation of revised tasks into the maintenance manuals for detailed inspections of the PCU rod ends in order to allow timely detection of pitting corrosion [and would prohibit using certain aircraft maintenance manual tasks].

You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0436.

Related Service Information under 1 CFR part 51

Bombardier, Inc., has issued the following service information.

Bombardier Service Bulletin 670BA-27-074, dated June 22, 2017. This service information describes procedures for detailed inspections for pitting and corrosion of the left and right rod ends of the elevator PCUs and to make sure that the spherical ball and

inner race of the rod ends move freely, and applicable corrective actions. Corrective actions include installing a new PCU.

The following tasks describe operational checks of the elevator and rudder control systems, and a detailed inspection of the rudder PCU rod end spherical ball.

- Task 27-20-00-13, Operational Check of the Rudder Control System of Section 3 - Systems and Powerplant Program, of the Bombardier Model CL-600-2B19 Series 100/200/440 Maintenance Planning Manual, Low Utilization Maintenance Program (MRLUMP-001), CSP A-054-009, Revision 37, dated July 10, 2018 (“MRLUMP-001, Revision 37”).

- Task 27-23-01-01, Detailed Inspection of the Rudder PCU Rod End Spherical Ball, of MRLUMP-001, Revision 37.

- Task 27-31-00-05, Operational Check of the Elevator Control System, of MRLUMP-001, Revision 37.

The following tasks describe operational tests of the elevator and rudder control systems, and a detailed inspection of the rudder PCU rod end spherical ball.

- Task 27-20-00-13, Operational Test of the Rudder Control System, of Section 3 - Systems and Powerplant Program, of the Bombardier Model CL-600-2B19 Series 100/200/440 Maintenance Planning Manual, Low Utilization Maintenance Program (MRLUMP-002), CSP A-054-060, Revision 37, dated July 10, 2018 (“MRLUMP-002, Revision 37”).

- Task 27-23-01-01, Detailed Inspection of the Rudder PCU Rod End Spherical Ball, of MRLUMP-002, Revision 37.

- Task 27-31-00-05, Operational Test of the Elevator Control System, of MRLUMP-002, Revision 37.

The following tasks describe operational tests of the elevator and rudder PCUs, and a detailed inspection of the elevator PCU rod end spherical ball.

- Task 27-20-00-106, Operational Test of the Rudder PCUs (Duplicate CMR 27-20-00-106), of Section 3 - Systems/Power Plant Tasks, of the Bombardier Model CL-600-2C10, CL-600-2D15, CL-600-2D24, Series 700/705/900 Maintenance Planning Manual, Low Utilization Maintenance Program (LUMP), CSP BC-116, Revision 15, dated May 25, 2017 (“LUMP, Revision 15”).

- Task 273000-207, Operational Test of the Elevator Power-Control Units (PCUs), of LUMP, Revision 15.

- Task 273000-215, Detailed Inspection of the Elevator PCU Rod End Spherical Ball, of LUMP, Revision 15.

The following task describes an operational check of each elevator PCU.

- Task 273000-207, Operational Check of each Elevator PCU, of Subject 1-27, of Section 1, Systems and Powerplant Program, Volume 1 of Part 1, Maintenance Review Board Report, Revision 18, dated July 25, 2018, of the Bombardier Model CL-600-2C10, CL-600-2D15, CL-600-2D24, and CL-600-2E25 Series 700/705/900/1000 Maintenance Requirements Manual, CSP B-053.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the State of Design Authority, the FAA has been notified of the unsafe condition described in the MCAI and service information referenced above. The FAA is proposing this AD because the FAA evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Proposed Requirements of this NPRM

This proposed AD would require revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations and to prohibit using certain aircraft maintenance manual tasks. Additionally, this proposed AD would require detailed inspections for pitting and corrosion of the left and right rod ends of the elevator PCUs and to make sure that the spherical ball and inner race of the rod ends move freely, and applicable corrective actions.

Costs of Compliance

The FAA estimates that this proposed AD affects 1,008 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

Estimated costs for required actions^{*}

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
9 work-hours X \$85 per hour = \$765	\$0	\$765	\$771,120

^{*}Table does not include estimated costs for revising the maintenance or inspection program.

The FAA has determined that revising the existing maintenance or inspection program takes an average of 90 work-hours per operator, although the FAA recognizes that this number may vary from operator to operator. In the past, the FAA has estimated that this action takes 1 work-hour per airplane. Since operators incorporate maintenance or inspection program changes for their affected fleet(s), the FAA has determined that a per-operator estimate is more accurate than a per-airplane estimate. Therefore, the FAA estimates the total cost per operator to be \$7,650 (90 work-hours x \$85 per work-hour).

The FAA has received no definitive data that would enable the agency to provide cost estimates for the on-condition actions specified in this proposed AD.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This proposed AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes and associated appliances to the Director of the System Oversight Division.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Will not affect intrastate aviation in Alaska; and
3. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Bombardier, Inc.: Docket No. FAA-2019-0436; Product Identifier 2019-NM-014-AD.

(a) Comments Due Date

The FAA must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Bombardier, Inc., airplanes, certificated in any category, as identified in paragraphs (c)(1) through (c)(4) of this AD.

(1) Model CL-600-2B19 (Regional Jet Series 100 & 440) airplanes, serial numbers 7003 and subsequent.

(2) Model CL-600-2C10 (Regional Jet Series 700, 701 & 702) airplanes, serial numbers 10002 through 10999 inclusive.

(3) Model CL-600-2D15 (Regional Jet Series 705) and CL-600-2D24 (Regional Jet Series 900) airplanes, serial numbers 15001 through 15990 inclusive.

(4) Model CL-600-2E25 (Regional Jet Series 1000) airplanes, serial numbers 19001 through 19990 inclusive.

(d) Subject

Air Transport Association (ATA) of America Code 27, Flight controls.

(e) Reason

This AD was prompted by reports of power control unit (PCU) rod end fractures due to pitting corrosion. The FAA is issuing this AD to address this condition, which, if not detected and corrected, could lead to a disconnect between the PCU and the control surface, resulting in potential loss of the control surface function or inadequate flutter suppression.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Maintenance or Inspection Program Revision for Certain Airplanes Operating under the Low Utilization Maintenance Program (LUMP)

(1) For Model CL-600-2B19 airplanes operating under the LUMP: Within 90 days after the effective date of this AD, revise the existing maintenance or inspection program, as applicable, to incorporate the information specified in paragraphs (g)(1)(i) through (g)(1)(vi) of this AD. The initial compliance time for accomplishing the actions is within 90 days after the effective date of this AD; or within the applicable interval specified in Section 3 - Systems and Powerplant Program, of the Bombardier Model CL-600-2B19 Series 100/200/440 Maintenance Planning Manual, Low Utilization Maintenance Program (MRLUMP-001), CSP A-054-009, Revision 37, dated July 10, 2018 ("MRLUMP-001, Revision 37"); or Section 3 - Systems and Powerplant Program,

of the Bombardier Model CL-600-2B19 Series 100/200/440 Maintenance Planning Manual, Low Utilization Maintenance Program (MRLUMP-002), CSP A-054-060, Revision 37, dated July 10, 2018 (“MRLUMP-002, Revision 37”), after the effective date of this AD; whichever occurs later.

(i) Task 27-20-00-13, Operational Check of the Rudder Control System, of MRLUMP-001, Revision 37.

(ii) Task 27-23-01-01, Detailed Inspection of the Rudder PCU Rod End Spherical Ball, of MRLUMP-001, Revision 37.

(iii) Task 27-31-00-05, Operational Check of the Elevator Control System, of MRLUMP-001, Revision 37.

(iv) Task 27-20-00-13, Operational Test of the Rudder Control System, of MRLUMP-002, Revision 37.

(v) Task 27-23-01-01, Detailed Inspection of the Rudder PCU Rod End Spherical Ball, of MRLUMP-002, Revision 37.

(vi) Task 27-31-00-05, Operational Test of the Elevator Control System, of MRLUMP-002, Revision 37.

(2) For Model CL-600-2C10 airplanes having serial numbers 10004, 10040, 10043, 10052, 10100, 10164, 10183, 10187, 10204, 10206, 10217, 10247, 10289, 10332, and 10343 operating under the LUMP; and Model CL-600-2D15 and CL-600-2D24 airplanes having serial numbers 15158, 15278, and 15370 operating under the LUMP: Within 30 days from the effective date of this AD, revise the existing maintenance or inspection program, as applicable, to incorporate the information specified in paragraphs

(g)(2)(i) through (g)(2)(iii) of this AD. The initial compliance time for accomplishing the actions is within 30 days after the effective date of this AD; or within the applicable interval specified in Section 3 - Systems/Power Plant Tasks, of the Bombardier Model CL-600-2C10, CL-600-2D15, CL-600-2D24, Series 700/705/900 Maintenance Planning Manual, Low Utilization Maintenance Program (LUMP), CSP BC-116, Revision 15, dated May 25, 2017 (“LUMP, Revision 15”), after the effective date of this AD; whichever occurs later.

(i) Task 27-20-00-106, Operational Test of the Rudder PCUs (Duplicate CMR 27-20-00-106), of LUMP, Revision 15.

(ii) Task 273000-207, Operational Test of the Elevator Power-Control Units (PCUs), of LUMP, Revision 15.

(iii) Task 273000-215, Detailed Inspection of the Elevator PCU Rod End Spherical Ball, of LUMP, Revision 15.

(h) Maintenance or Inspection Program Revision for Certain Airplanes that are not Operating Under the LUMP

For Model CL-600-2C10, CL-600-2D15, CL-600-2D24, and CL-600-2E25 airplanes that are not operating under the LUMP: Within 30 days from the effective date of this AD, revise the existing maintenance or inspection program, as applicable, to incorporate the information specified in task 273000-207, Operational Check of each Elevator PCU, of Subject 1-27, of Section 1, Systems and Powerplant Program, Volume 1 of Part 1, Maintenance Review Board Report, Revision 18, dated July 25, 2018, of the Bombardier Model CL-600-2C10, CL-600-2D15, CL-600-2D24, and CL-600-2E25 Series 700/705/900/1000 Maintenance Requirements Manual, CSP B-053, (“CSP B-053,

Revision 18”). The initial compliance time for accomplishing the actions is within 30 days after the effective date of this AD; or within the applicable interval specified in CSP B-053, Revision 18, after the effective date of this AD; whichever occurs later.

(i) No Alternative Actions or Intervals

After the existing maintenance or inspection program has been revised as required by paragraph (g) or (h) of this AD, no alternative actions (e.g., inspections) or intervals may be used unless the actions and intervals are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in paragraph (n)(1) of this AD.

(j) First Inspection of the Elevator PCU Rod End for Certain Airplanes

For Model CL-600-2C10, CL-600-2D15, CL-600-2D24, and CL-600-2E25 airplanes that are not operating under the LUMP, and that have accumulated less than 6,000 total flight hours as of the effective date of this AD: Within the compliance time indicated in figure 1 to paragraph (j) of this AD, perform a detailed inspection for pitting and corrosion of the left and right rod ends of the elevator PCUs and to make sure that the spherical ball and inner race of the rod ends move freely, and do all applicable corrective actions, in accordance with paragraph 2.B. of the Accomplishment Instructions of Bombardier Service Bulletin 670BA-27-074, dated June 22, 2017. Do all applicable corrective actions before further flight.

Figure 1 to paragraph (j) – *First Inspection Compliance Times*

Total Flight Hours as of the Effective Date of this AD	Compliance Time
Less than 800 total flight hours	After the airplane accumulates 1,000 total flight hours, but not to exceed 1,400 total flight hours
800 or more total flight hours and less than 6,000 total flight hours	Within 880 flight hours from the effective date of this AD

(k) Second Inspection of the Elevator PCU Rod End for Certain Airplanes

(1) For Model CL-600-2C10, CL-600-2D15, CL-600-2D24, and CL-600-2E25 airplanes that are not operating under the LUMP, and that have accumulated 2,600 total flight hours or less at the time of the inspection required by paragraph (j) of this AD: Before the accumulation of 3,400 total flight hours, perform an additional detailed inspection for pitting and corrosion of the left and right rod ends of the elevator PCUs and to make sure that the spherical ball and inner race of the rod ends move freely, and do all applicable corrective actions, in accordance with paragraph 2.B. of the Accomplishment Instructions of Bombardier Service Bulletin 670BA-27-074, dated June 22, 2017. Do all applicable corrective actions before further flight.

(2) For airplanes that have accumulated more than 2,600 total flight hours at the time of the inspection required by paragraph (j) of this AD: a second inspection is not applicable.

(l) No Inspection for Certain Airplanes

The requirements of paragraphs (j) and (k) are not applicable to airplanes that have accumulated 6,000 total flight hours or more as of the effective date of this AD.

(m) Service Information Prohibition for Certain Airplanes

For all Model CL-600-2B19 airplanes: After 30 days from the effective date of this AD, this AD prohibits the use of the aircraft maintenance manual (AMM) tasks specified in paragraphs (m)(1) through (m)(3) of this AD.

(1) Task 10-12-00-550-804, Short-Term Storage Return-to-Service Maintenance Checks, of the Bombardier CL-600-2B19 Series 100/200/440 AMM, CSP A-001, Revision 55, dated April 10, 2017, or earlier revisions of this task.

(2) Task 27-23-01-220-801, Detailed Inspection of the Rudder PCU Rod End Spherical Ball, of the Bombardier CL-600-2B19 Series 100/200/440 AMM, CSP A-001, Revision 54, dated October 10, 2016, or earlier revisions of this task.

(3) Task 27-33-01-220-801, Detailed Inspection of the Elevator PCU Rod End Spherical Ball, of the Bombardier CL-600-2B19 Series 100/200/440 AMM, CSP A-001, Revision 54, dated October 10, 2016, or earlier revisions of this task.

(n) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; fax

516-794-5531. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada Civil Aviation (TCCA); or Bombardier, Inc.'s TCCA Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

(o) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian AD CF-2018-29, dated November 2, 2018, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2019-0436.

(2) For more information about this AD, contact Darren Gassetto, Aerospace Engineer, Mechanical Systems and Admin Services Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7323; fax 516-794-5531; email 9-avs-nyaco-cos@faa.gov.

(3) For service information identified in this AD, contact Bombardier, Inc., 400 Côte-Vertu Road West, Dorval, Québec H4S 1Y9, Canada; Widebody Customer Response Center North America toll-free telephone 1-866-538-1247 or direct-dial telephone 1-514-855-2999; fax 514-855-7401; email ac.yul@aero.bombardier.com; Internet <http://www.bombardier.com>. You may view this service information at the FAA,

Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Issued in Des Moines, Washington, on June 12 2019.

Michael Kaszycki,
Acting Director,
System Oversight Division,
Aircraft Certification Service.

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